

DRAFT RESPONSE TO EPA'S OCTOBER 21, 2014 RESPONSE TO LWG CLARIFICATIONS AND QUESTIONS ABOUT "NATURAL RECOVERY AREAS"

Introduction

This memorandum presents a response to the response provided by EPA on October 21, 2014 in regard to sedimentation rates used in the Draft FS to define depositional areas. Some additional information relevant to this discussion is also presented at the end of this memorandum. After reviewing your response and considering the approach used in the draft FS the LWG believes the threshold of 1 cm/yr to determine depositional areas is a reasonable and conservative value for use in the revised FS. The rationale supporting this determination is provided in the following response. We look forward to discussing this matter further with EPA's technical team.

Response

In EPA's October 21, 2014 response to LWG clarifications and questions about "natural recovery areas", EPA references a statement provided in Section 2.3.6 of Appendix La to the Draft FS that says "Multibeam bathymetry surveys have a typical measurement error range of 0.5 feet resulting in an uncertainty range of 1 foot for bed elevation changes between two surveys." Citing this information from Appendix La to establish a deposition rate for Portland Harbor is inappropriate for the following reasons:

- This reference to *typical* bathymetry survey precision was a general statement that was made to support a separate point that uncertainty in bed elevation change decreases as the time period between two surveys increases. The *actual* precision of the bathymetry surveys conducted by David Evans & Associates (DEA) is ± 7.5 cm (or 3 inches) as described in DEA 2003¹ and Section 6.2.2.1.1 of the Draft FS, not 6 inches (15 cm) as asserted by EPA.
- For the evaluation of changes in bathymetry over time presented in the Draft FS, in addition to the point-by-point comparisons shown on the bathymetry difference maps, LWG also performed comparisons of results averaged over various spatial scales (Site-wide, ½-mile averages segregated laterally into nearshore and navigation channel averages). It is our understanding that EPA is conducting similar evaluations over various spatial scales.

¹ DEA 2003 states "All areas that changed ± 0.25 feet, which is the approximate vertical error budget of the survey, were colored gray." Lower Willamette River Multibeam Bathymetric Survey Report. Prepared by David Evans and Associates, Inc. Submitted to Striplin Environmental Associates. Summer 2002.

- Further, it should be noted that the uncertainty of ± 7.5 cm represents the uncertainty of an individual multi-beam survey data point. It is important to recognize that the uncertainty in bed elevation change decreases when the multiple point values are averaged over larger spatial scales because the sample size increases. Thus, for those larger spatial scale comparisons, which are usually the most relevant comparisons, the actual uncertainty is less than (± 7.5 cm).

Additional Information

In addition, it is worth noting that the recent Interstate Technical Regulatory Council (ITRC) 2014 Contaminated Sediments Remediation guidance (http://www.itrcweb.org/contseds_remedy-selection/) establishes sedimentation rate thresholds for evaluation and selection of Monitored Natural Recovery (MNR). The guidance states: “Sites with annual net deposition much greater than annual erosion and resuspension and with annual net deposition rates greater than roughly 0.5 cm/yr are prime candidates for MNR/EMNR.” This new guidance supports the approach utilized in the 2012 Draft FS:

- The draft FS threshold of 1 cm/yr (Table 6.2-4) provides a safety factor beyond the ITRC guidance threshold of 0.5 cm/yr for the determination of prime candidate areas for MNR.
- Considering the ITRC guidance threshold of 0.5 cm/yr for the determination of prime candidate areas for MNR, EPA’s use of a 2.5 cm/yr threshold is inappropriate.

Lastly, sedimentation rate is only one factor in the evaluation of MNR, as described in ITRC 2014 and EPA’s 2005 sediment remediation guidance, and should not be used in isolation as a “pass/fail” determination of the suitability of MNR at any particular location.